

1. On the Habits of the Burrowing Owl (*Pholeoptynx cunicularia*). By W. H. HUDSON, C.M.Z.S.

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The Burrowing Owl is abundant everywhere on the open level pampas of the Argentine Republic, and avoids woods but not districts abounding in scattered trees and bushes.

It sees better than other Owls by day, and never affects concealment, nor appears molested by diurnal sounds and the glare of noon. When a person passes near one it stares fixedly at him, following him with the eyes, the round head turning about as on a pivot. If closely approached, it drops its body in a somewhat playful fashion, emitting a brief scream, followed by three abrupt ejaculations—and if made to fly, goes but fifteen or twenty yards off, and alights again with face towards the intruder; and no sooner does it alight than it repeats the gesture and scream, standing stiff and erect, and appearing beyond measure astonished at the intrusion. By day it flies near the surface with wings continuously flapping, and seldom goes far, and invariably before alighting glides suddenly upwards for some distance and comes down abruptly. It frequently runs rapidly on the ground, and is incapable of sustaining flight long. Gaucho boys pursue them for sport on horseback, taking them in fifteen or twenty minutes. They live in pairs all the year, and sit by day at the mouth of the burrow or on the Vizcacha's mound, the two birds so close together as to be almost touching; when alarmed they both fly away, but sometimes the male only, the female diving into the burrow. Their sitting on the ground may be more from necessity than choice, as they usually perch on the summits of bushes where such abound.

These are the commonest traits of the Burrowing-Owl in the settled regions, where it is excessively numerous and familiar with man; but in the regions hunted over by the Indians it is scarce, and in some of its habits quite a different bird. Shy of approach as a persecuted game-fowl, it rises to a considerable height in the air when the approaching traveller is yet far off, and flies often beyond sight before descending again to the earth. This wildness of disposition is, without doubt, traceable to the active animosity of the pampa tribes, who have all the ancient wide-spread superstitions regarding the Owl. Sister of the Evil Spirit is one of their names for it. They hunt it to death whenever they can, and, when travelling, will not stop to rest or encamp on the spot where an Owl has been seen. As soon as the plains are settled by whites, the bird drops this wary habit, and becomes exceedingly tame. They are also tenacious of the spot they live in, and are not, like the Pipit and Spurred Lapwing, driven out by cultivation. When the fields are ploughed up, they burrow on the borders of the ditches, and sit on the wayside fences, and are so tame that a rider can easily knock them down with his whip. Several pairs live near my house; and when a person rides up to within three or four yards of a burrow the birds only snap and hiss and ruffle up their feathers, refusing to fly away.

Occasionally the Owls are seen preying by day, especially when any thing passes near, offering the chance of an easy capture: often I have amused myself throwing bits of earth near one as it sat by its kennel; for the bird will immediately give chase, only discovering its mistake when the stone is firmly clutched in its talons. When rearing their young they are perhaps quite as active by day as by night. On the hot days of November multitudes of two large species of *Scarabæus* appear; and the bulky bodies and noisy bungling flight of these beetles invite the Owls to pursuit; and on every side they are seen chasing and striking down the beetles, and tumbling upon them in the grass. Owls have a peculiar manner of taking their prey: they grapple it so tightly in their talons that they totter and strive to steady themselves by throwing out their wings this way and that, and, often losing their balance, fall prostrate, and flutter on the ground. If the animal captured be small, they proceed after a while to dispatch it with the beak; if large, they usually rise laboriously from the earth, and fly to some distance with it, thus giving time for the wounds inflicted with their claws to do their work.

How remarkable it is that the *Tænioptera* (so different in structure from Owls) should resemble them in the peculiar manner of seizing their prey!

The *Tænioptera* frequently darts upon a large insect on the ground, and, grasping it with its feet, flutters and totters precisely like an Owl. This habit I have observed in four species of *Tænioptera*.

At sunset the Burrowing Owls begin to hoot; a short followed by a long note is repeated many times, with an interval of a second of silence. There is nothing dreary or solemn in this performance; but it is rather soft and sorrowful, somewhat resembling the lowest notes of the flute in sound. In spring they hoot a great deal, many birds responding to each other.

In the evening they are often seen hovering at a height of 40 yards above the surface, and continuing a minute or longer without altering their position. They do not drop the whole distance at once on their prey, but descend vertically, tumbling and fluttering, as if wounded, to within 10 yards of the earth, and then, after hovering a few seconds more, glide obliquely upon it. They prey on every living creature not too large to be overcome by them. Sometimes they sever off and leave untasted the head, tail, and feet of a mouse. The hind quarters of frogs and toads are almost invariably rejected; and inasmuch as these are the most fleshy and succulent parts, this is a strange and unaccountable habit. They make an easy conquest of a snake 18 inches long, and kill it by dealing it blows with the beak, hopping briskly about it all the time, and appearing to guard themselves with the wings. Many individuals become destructive to poultry-yards, carrying off the chickens by day. In seasons of plenty they destroy more prey than they can devour; but in severe winters they come, apparently starving, about the houses, and will then stoop to carry off any dead animal food,

though old and dried up as a bit of parchment. This I have often seen them do. Though the Owls are always on familiar terms with the Vizcachas, and occasionally breed in one of their neglected burrows, they generally excavate their own burrows. The kennel is crooked, and varies greatly in length, from 4 to 12 feet. The nest is at the extremity, composed of wool and dry grass, often exclusively of horse-dung. The eggs are five, white, and nearly spherical. After the female has begun laying, the birds continue to carry in dry horse-dung, until the floor of the burrow and a space before it is thickly carpeted with this material. The following spring the loose earth and rubbish is cleared out; for the same burrow may serve them two or more years. It is always untidy, but mostly so during the breeding-season and when prey is very abundant, the floor and ground about the entrance being often littered with excrements and pellets of hair and bones, wing-cases of beetles, and feathers, hind quarters of frogs in all stages of decay, the great hairy black spiders of the pampas, and remains of half-eaten snakes and other unpleasant creatures they subsist on. But all this carrion about the Owl's disordered house reminds one forcibly of the important part assigned to it in the natural economy. The young birds ascend to the entrance of the burrow to bask in the sun and receive the food their parents bring: when approached they become irritated, snapping with their beaks, and appearing reluctant to enter the burrow; but for some weeks after learning to fly they make it their refuge from danger. Old and young birds often live four or five months together. I believe nine tenths of the Owls in this country make their own burrows; but as they occasionally prefer breeding in the forsaken burrows of mammals to mining themselves, it is probable they would almost always observe this last habit did suitable burrows abound.

I have never seen any complete account of the North-American form of this Owl, but presume its habits are now well known, as all matters connected with science receive so much attention in that country. From such stray notices of the bird as I have met, I learn that it inhabits and invariably breeds in the kennels of the Prairie-Marmot. The small, neat burrows of that mammal must be far better suited to its requirements than the vast ones excavated by the Vizcacha.

Probably the Burrowing Owl originally acquired the habit of breeding in the earth in open level bare regions; and when this habit (favourable as it could not but be in such shelterless places) had become ineradicable, a want of suitable burrows would lead it to clean out such old ones as had become half filled with rubbish, to deepen such as were too shallow, and ultimately to excavate new ones.

In Buenos Ayres the mining instinct varies greatly in individuals. In the birds that breed in Vizcachas' burrows the instinct is doubtless weak; they can hardly be said to possess it.

Some pairs, long mated, only begin their burrows when the breeding-season is already on them; others make their burrows as early as April—that is, six months before the breeding-season. Gene-

